Also inside: Should the CIO Know How to Code? | Hewlett-Packard Plots a Comeback | Losing the 'Personal' in 'Personal Computing'

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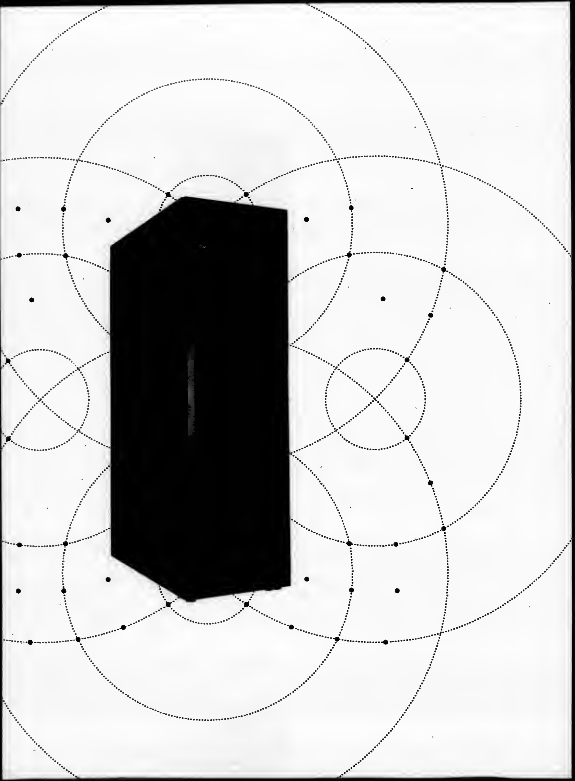
Rebirth OF RE-ENGINEERING

Once again, it's all about business processes.
But this time around, IT is leading the charge.



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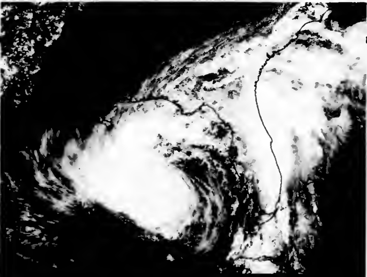

Supercomputers and advanced modeling tools helped Louisiana officials prepare for Isaac, shown here moving northwest through the Gulf of Mexico on Aug. 27.

NASA

HIGH-PERFORMANCE COMPUTING

Supercomputers Aid Hurricane Prep

THANKS TO advances in computing power and storm surge modeling systems, Louisiana officials bracing for Hurricane Isaac's arrival last month had more detailed data about the storm's potential impact than they had seven years earlier when they were preparing for Hurricane Katrina.

Researchers at university supercomputing centers in Texas and Louisiana used real-time data to inform emergency workers about what would happen once the hurricane sent water into canals, levies and neighborhoods.

When Katrina hit in 2005, tools for modeling storm surges, while good, were rudimentary compared with what's available today. Back then, Louisiana used computer models with up to 300,000 "nodes," and it took six hours to run a simulation.

For each node, which represents a particular location on a map, algorithms run computations to determine what will happen during a hurricane. The number of nodes represented is roughly analogous to the number of dots per square inch in a photograph: The higher the number, the more detail that's available.

Today, simulations with some 1.5 million nodes can be completed in an hour and a half, said Robert Twilley, an oceanographer and executive director of the Louisiana Sea Grant Program.

Louisiana is using an unstructured grid. To provide neighborhood-level details about potential flooding, nodes can be concentrated in areas that are most vulnerable. The system also helped identify the best staging areas for recovery efforts.

– *Patrick Thibodeau*

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TECH REGULATIONS

FAA to Review Rules on In-Flight Use of Devices

The Federal Aviation Administration is reassessing its rules about the use of portable electronic devices on airplanes, seeking public comments and forming a government-industry group to study when the devices can be used safely.

Currently, passengers are required to power down laptops, tablets, phones, e-readers and other devices during takeoff and landing and while the plane is reaching its cruising altitude. The rules are designed to prevent interference with navigation and other onboard systems. Phones and other devices that access cellular networks are banned throughout flights.

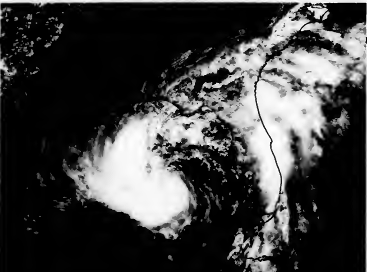
The panel being formed to look at the issue anew will include representatives from airlines, mobile companies and aviation manufacturers, as well as pilot, flight attendant and passenger groups, the FAA said.

In meetings over the next six months, the group will look at airlines' safety-testing methods and consider new standards for in-flight use of devices. Public comments will be accepted for two months.

Jot Carpenter, an executive with the mobile industry group CTIA, said that use of portable devices during "the whole flight" should "absolutely be allowed," because studies have shown that devices don't interfere with aviation systems.

– STEPHEN LAWSON, IDG NEWS SERVICE

HeadsUp



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BETWEEN THE LINES
By John Klossner

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AMERICA'S CUP 2013

Oracle Brings High Tech to the High Seas

FORGET THE fastest yacht; the outcome of next year's America's Cup sailing competition could come down to which boat has the fastest computer.

The boats competing on San Francisco Bay in 2013 will be kitted out bow to stern with high-tech gear, including sensors that measure variables like wind speed and the amount of stress on the craft's hull, and a server that analyzes data and sends instructions to the crew.

Technology has long played a role in the America's Cup races, but next year it could be a more decisive factor than ever. The boats are faster and the course is smaller, "so you're maneuvering almost every minute," said Asim Khan, a New Zealander who's in charge of IT for Oracle Team USA, which won the last America's Cup competition, in 2010.

Preliminary events are already under way. Teams have been racing 45-ft. catamarans to get a feel for the larger, 72-ft. vessels, called AC72s, that they will officially race next summer.

It's hard to appreciate the scale of an AC72 without standing next to one. The main sail is roughly 10 stories high, and each hull is as long as two city buses parked end to end.

The boats have a top speed of close to 40 knots, and the onboard computer helps the crew make split-second decisions to maximize the boat's speed and prevent the vessel from capsizing or breaking apart under the strain.

Oracle's boat has hundreds of sensors embedded throughout the hulls, in the underwater fins and up the mast. These devices are connected to a server that distributes data wirelessly to computerized "wristwatches" and other devices worn by the crew.

Some sailing purists have bemoaned the use of so much technology, saying it ruins the sport. But Erin Schanen, executive editor of *Sailing Magazine*, said she believes technology is essential in today's races, and argued that it will likely be "the deciding factor" in determining who wins.

– James Niccolai, IDG News Service

Micro Burst

An inoperable Apple-1 computer might fetch up to

$126,000

when it goes on the auction block next month.

OPERATING SYSTEMS

Win 8 Upgrades Manageable, Says IT Trainer

Windows 8's learning curve isn't as steep as some have claimed, according to PC Helps, an enterprise support and training firm.

The operating system "will be difficult to adjust to," said Joe Puckett, director of training at PC Helps. "But there are a lot of things that can be done to minimize the disruption."

PC Helps has already worked on a Windows 8 migration at a 7,000-employee company, which Puckett declined to name.

The degree of disruption "depends on how a company chooses to do rollouts," Puckett said. Focusing on mobile users, for instance, will make for a speedier deployment. "Anyone who has used a smartphone will pick up [Windows 8's Metro interface] very quickly," he said.

Desktop migrations will be tougher, Puckett acknowledged.

He also advised companies to train users before the rollout, not afterward, and to create shortcuts and images for specific user groups.

Any short-term pain might be mitigated by longer-term gains. "Like Google and Apple, Microsoft's vision is one interface across multiple devices," said Puckett. If desktops, tablets and smartphones all have the same interface, he noted, "that cuts down the learning curve."

– GREGG KEIZER

BETWEEN THE LINES

By John Klossner

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Hewlett-Packard Plans a Comeback

CEO Meg Whitman insists that HP is in the 'early stages of a turnaround' despite its dismal third-quarter results. By Patrick Thibodeau

HEWLETT-PACKARD has had some bad quarters in its 73 years, but perhaps none as bad as its latest — when it reported a loss of $8.9 billion on sales that fell 5% to $29.7 billion.

The poor third-quarter results produced little drama on Wall Street, because CEO Meg Whitman had prepared investors for a disappointing performance by launching a massive corporate restructuring earlier this year.

In March, HP said that it would be combining its PC and printer businesses; in May, it announced plans to cut 27,000 jobs; and early last month, the company took an $8 billion charge against its services division, which has struggled since HP's $13.9 billion acquisition of EDS in 2008.

"Make no mistake about it, we're still in the early stages of a turnaround," Whitman said during the company's quarterly conference call with financial analysts.

During the call, Whitman revealed some product plans she expects will get the company back on track.

For example, HP's struggling Personal Systems Group, whose sales plunged by 10% in the quarter, is focusing on a migration to Microsoft's new operating system, Windows 8, and on the development of PCs that can double as tablet computers, Whitman said.

HP is also putting a lot of effort into developing high-end servers, particularly for so-called hyperscale computing, which involves using low-energy chips and scale-out architectures for cloud, Web and supercomputing uses, she added.

Industry analysts say that despite Whitman's efforts, HP will continue to face significant challenges in all of its businesses for an extended period of time.

Charles King, an analyst at Pund-IT, noted that competition from smartphones and tablets will continue to put pressure on the Personal Systems Group, which sells mostly PC gear.

Moreover, he noted that many consumers and businesses looking to buy PCs are postponing any spending until the launch of Windows 8, which computer makers hope will happen in time for the 2012 holiday shopping season.

"Toss in generally weak financial performance across global markets, and it's pretty much a perfect storm for [PC] companies like HP," King said.

Some financial analysts are reportedly still suggesting that HP spin off its PC business — an idea floated by former CEO Leo Apotheker before his ouster last year; some say the decision to find a new CEO was related in part to the PC plan.

That idea faces a chorus of criticism, with many observers expressing concern that China-based Lenovo would be a likely buyer. A Lenovo acquisition of HP's PC unit could threaten the U.S.'s position as a global technology leader, they say.

Analysts also note that despite a recent court victory, HP's legal battle with Oracle over new database and application development on Intel's Itanium chips, widely used in HP systems, has hurt business.

Although a California court ordered Oracle to continue porting its software to Itanium, IDC analyst Crawford Del Prete said "one could argue that the damage has already been done with customers — it has created a lot of uncertainty around the platform."

Del Prete also said it's critical that HP shore up its services unit, where Mike Nefkens was named acting chief, replacing John Vistenin, who departed "to pursue other interests," according to the company. Vistenin was hired by Apotheker during his short, rocky run atop the U.S. tech icon. ◆

Chris Kanaracus *of the IDG News Service contributed to this story.*

still in the **early stages** of a turnaround

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>
> *Marc Hoit, CIO, NC State*

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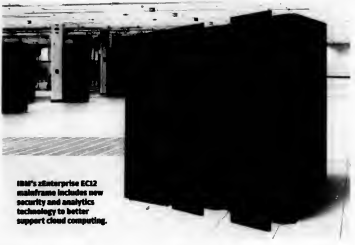

IBM's zEnterprise EC12 mainframe includes new security and analytics technology to better support cloud computing.

IBM Keeps the Mainframe Alive

With a 5.5GHz, six-core processor, the zEnterprise EC12 is capable of handling analytics and hybrid cloud workloads. By Patrick Thibodeau

IBM'S LATEST MAINFRAME, the zEnterprise EC12, was built with data analytics and hybrid clouds in mind.

And that's good, analysts say, because the company must focus on new applications like those to ensure that its workhorse data center technology remains relevant — and continues to generate big profits — at a time when CIOs can choose from a wide array of alternative technologies.

Charles King, an analyst at Pund-IT, said new IBM mainframes always include "an interesting mix of significant performance bumps [and] new features." Without new capabilities, he added, the technology would "get stuck as just a credit card and bank statement transaction platform."

With the zEnterprise EC12, IBM has taken its transaction model "and [adapted] it to different kinds of transactions," King said.

For instance, he noted that the new system is capable of meeting the computational requirements that come from, say, RFID-generated data and smart electricity meters.

David Wade, CIO of financial services firm Primerica, said he intends to upgrade to the EC12 from its predecessor, the zEnterprise 196, in a year to 18 months.

Primerica has installed 19 mainframes during Wade's 32 years at the company. The IT shop uses primarily IBM systems, including System p and Wintel computers.

Wade said Primerica is committed to the traditional mainframe platform. He said he knows of other organizations that have migrated away from mainframes only to return. He called such moves "a waste of time and money."

It's because of people like Wade that IBM continues building mainframes, despite competition from a growing number of highly capable alternatives — including the company's own Unix- and IBM i-based Power systems.

Announced late last month, IBM's zEnterprise EC12 runs a new 5.5GHz, six-core processor. The zEnterprise 196, which was announced two years ago last month, featured a 5.2GHz, quad-core processor.

IBM says the new system offers 25% more performance per core than its predecessor, and some workloads will see performance gains of up to 45%.

The EC12 was produced at 32 nanometers, compared with 45nm for the previous model. The smaller size makes it possible to include more cache on the chip — in this case, 33% more Level 2 cache.

The system also boasts twice as much L3 and L4 cache as the prior model, said Jeff Frey, CTO of the System z platform and an IBM Fellow.

Joe Clabby, an analyst at Clabby Analytics, said the increase in cache helps improve performance. The new system is "better at data-intensive workloads," he said. "The closer you can put the data to the processor, the faster it can be executed."

The EC12 has 3TB of system memory, about the same as the 196, but it also has flash memory with a maximum capacity of 6.4TB, and that improves system performance, Frey said.

Initially, the flash memory will be used internally for efficient paging of virtual memory, diagnostics and better handling of workloads, said Frey. Eventually, he added, IBM's DB2 database and Java will directly exploit the flash memory, providing "huge improvements" in the performance and scale of DB2, buffer pools and Java.

The zEnterprise EC12 was also adapted to a type of data center design that doesn't include raised floors. In what IBM says is a first for a mainframe, it has overhead power and cabling support. ◆

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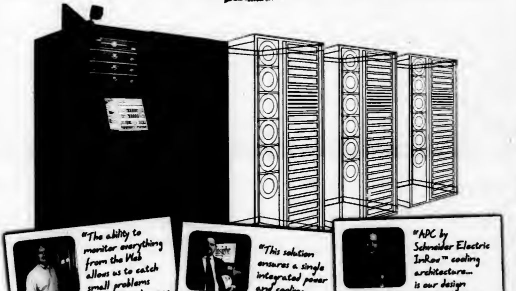

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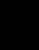

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Adrian R. Gardner

Goddard's CIO looks to risk mitigation to manage cybersecurity challenges.

What are your hobbies? Running, martial arts

What has been your biggest career accomplishment? Data.gov

What professional ambition would you like to accomplish? Leading an agency IT organization and eventually starting my own business.

What's the best advice you've received? In the middle of difficulty lies opportunity.

What's the best advice you've given? Guide your own career path and recognize it's OK to be different.

What's your favorite science fiction movie or book? *Minority Report*, because of all the IT. Also *A Beautiful Mind*. It isn't science fiction, but it is about a scientist.

PHOTOGRAPHY BY PAT IZZO

EVERY YEAR, *Temple University's Fox School of Business chooses an IT executive for its Information Technology Leader Award, in recognition of the individual's leadership in the use and development of IT in business. The 2012 recipient was Adrian R. Gardner, director of the Information Technology and Communications Directorate, CIO at NASA's Goddard Space Flight Center and a member of the federal government's Senior Executive Service. Gardner is also an Air Force veteran and has held high-level IT positions at the National Weather Service and the Department of Energy. Here, he talks about what it takes to lead IT at one of the most famous government organizations.*

Why do you think you earned the Fox award? For the work we've been doing recently — I say "we" because it's really been a team effort — with Data.gov and around openness and innovation. Data.gov is a website used to host government data from the majority of agencies, where we've decided as government to make data more open and transparent.

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EXECUTIVE VIEWPOINT

Tim Golden

RESIDENT CHIEF TECHNOLOGY OFFICER FOR THE AMERICAS INDUSTRY STANDARD SERVER BUSINESS AT HEWLETT-PACKARD

In this role, he acts as the primary liaison between HP's customers and its ProLiant platform development teams. With 30 years of industry experience at HP, Compaq, Dell, and Apple, Tim brings a comprehensive and thorough understanding of technology trends and emerging product opportunities and has developed a unique ability to convey complex technical advantages into practical business benefits.

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Autonomics in IT

Next-Gen Servers Stress Intelligence and Automation

Hewlett-Packard has been assessing what trends like virtualization and cloud computing mean to its customers. We spoke with HP executive Tim Golden about the demands such trends place on application servers, and how HP has embedded intelligence and increased automation in its next-generation platforms in response.

What types of manual IT tasks can be automated?
Servers need to be more innovative, more intelligent and more self-sufficient given that 51 percent of server outages are linked to human intervention or error. For instance, what if we could, through clever engineering, fix problems that servers or server administrators might otherwise trip up on? One example involves monitoring for multi-bit errors in memory. If we can identify a 2-bit memory error we can automatically fix it on the fly without interruption of service. Another example is an LED light scheme on the hard-disk drive carrier that is designed to not only convey general health status, but also visually identify and isolate failed drives from good drives within RAID sets. That eliminates another relatively common human error.

> We're seeing 6 times performance gains compared to previous-generation servers.

How can server performance improve to meet the demands of enterprise applications, virtualization, and cloud computing?
One way is by addressing the imbalance that exists between processors, memory and storage. Over the last five to six years, storage performance hasn't kept pace with the performance advances we've seen in multicore processors and in DDR memory. One example of how we've addressed this performance gap is by fine-tuning the algorithms associated with solid-state drives and our new Smart Array controllers. Through such methods, we're seeing 6 times performance gains compared to previous-generation servers.

When looking to reduce energy costs, is it practical to consider higher-performance servers?
It makes perfect sense. With the new-generation platforms running the newest advanced processors, we're seeing performance gains upwards of 50 to 200 percent depending on the workloads. And thanks to the energy-saving techniques we've implemented, we're delivering as much as 70 percent more compute per watt than even our last generation, which was a quantum leap over earlier generations.

Doesn't the increased complexity make next-gen servers more difficult to service?
No; we've introduced many features to make them easier and faster to service. We've also done many things to make them more reliable. That includes equipping servers with an Active Health System that monitors 1,600 different health and configuration parameters 24 hours per day, 365 days per year. That information is stored for one year, and can be used to recover much faster from any problems that do occur. Product engineers can also build more reliable servers by looking at the correlation between component failures and configuration data.

It sounds as though HP committed significant resources to creating the ProLiant Gen8 portfolio.
It was a 2.5-year development effort, with a $300 million budget. We now have some 917 patents that are either granted or pending related to Gen8 and its immediate infrastructure. There are no fewer than 150 unique features on Gen8 servers that didn't exist in our previous generation. If that doesn't address escalating server demands, I don't know what will. ■

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Watch a new *Computerworld* video about HP ProLiant Gen8 servers at **hp.com/servers/gen8racks** or **scan the QR code below.**

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*For details on claim substantiations, visit hp com/servers/gen8racks

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Cybersecurity is going to continue to be a huge challenge, and as things go more mobile, that will bring in more threats, but also more opportunities.

It can be leveraged to stimulate business and give our citizens and stakeholders more visibility into what we're doing and to create more apps using government data.

How did you get into technology and the CIO role, considering that none of your academic degrees is in IT? I was always interested in science, and then I went into the Air Force and was a launch control officer for a nuclear weapons facility [where] my role was communications. That was my first foray into IT. When I got out of the Air Force, I was recruited by the Department of Energy and looked at large nuclear facilities and the technologies they had. So I had to get conversant in IT, and when the position of CIO was established in the federal government, I was asked if I'd be interested in filling the role. So I ended up in the cybersecurity area, and I worked my way up.

What are the unique challenges of working in IT within the federal government? We have a fiduciary duty to ensure that we're protecting our citizens and delivering to the stakeholders. We had this little thing recently called the Venus Transverse. Venus crossed over the sun, and we had to put in place a very robust infrastructure to accommodate the number of folks who were going to view the event. So one challenge is having to be very agile and meeting the needs of the customer base. [Another challenge is] the scale of the things we work on. I run the mission network for NASA, so anytime there's a spacecraft that leaves the atmosphere of the Earth from the U.S. perspective, my folks track that. When you see the president talking to the space station, that goes over my lines.

What can others learn from your challenges? We are on the leading edge of adopting a number of technologies and adopting them to meet our mission needs. For example, there's a Facebook page for the Solar Dynamics Observatory, and this is the capability we used to view the Venus Transverse. There are agencies that can learn how to apply those technologies so they have a mission benefit and have a return on the investment.

You spent part of your career focused on cybersecurity. What do you see as the biggest threat today? That's probably my No. 1 priority today. Because NASA is an information-sharing organization, the challenge we have is, How do you have this need to share and then have a need to protect those assets? Cybersecurity is going to continue to be a huge challenge, and as things go more mobile, that will bring in more threats, but also more opportunities. There will always be this tension between creative collaboration and security. I don't think there are quick solutions. There are quick measures that mitigate the risk. I don't think you can get to 100% security. You can get to a point where you're comfortable with the risk posture and you have enough visibility to accept that risk and put in the controls to address that.

How do you prioritize your time and resources? I prioritize along the needs of the customer, and then I prioritize my staff's time and resources accordingly. We can't be all things to all people. Our budget will not allow that. My normal challenge is to fit 10 pounds of potatoes into a five-pound sack, but there are ways to do that. So we figure out not only operation and maintenance today, but also what are the innovations that will help.

How do you build opportunities for innovation into your organization? In terms of looking at maintaining what we have, that's around 80% of my budget, and the other 20% is sustained engineering. What I've done now is to really get to 60% [operations and management], 10% sustained engineering, and the other 30% on innovation. I established a position, associate director for innovation, about a year and a half ago that reports to me to incorporate innovation into our day-to-day activities. You might have to spend very little, but hopefully you're able to identify an innovative project that will take the place of something you're spending a lot of money on. So portfolio management is one area I'm using to take advantage of that.

Do you have any dreams or plans to go into space? I would love it. I think it will happen in my lifetime. The price of space travel will hopefully decrease where we mere mortals can get a ticket and actually go into space.

– Interview by Computerworld *contributing writer* **Mary K. Pratt** *(marykpratt@verizon.net)*

OPINION

S.J. VAUGHAN-NICHOLS

Losing the 'Personal' in 'Personal Computing'

For 40 years, no matter what sort of PC you bought, you could always modify it to meet your needs.

I GOT INVOLVED IN COMPUTERS just in time for the revolution. It was the 1970s, and we were moving from centrally managed computers to PCs. For the next 40 years, users had an unprecedented level of choice, which put the "personal" in "personal computing." Today, that revolution is being pushed back.

I don't want to overstate the case. In some organizations, users never moved from the terminal/server model, and even if you had a PC, there was always some vendor lock-in. If you bought a Mac, you used Apple's operating system. You had more options with a Windows PC, but they were limited.

Through all those years, though, no matter what sort of PC you bought, you could always modify it to meet your changing needs. All you needed were expansion slots and a bit of know-how. It was easy to upgrade to a more powerful graphics card, add more memory or switch out to a bigger hard drive.

The first sign that things were changing came with the arrival of sealed-unit smartphones and, a bit later, tablets. Upgradability just doesn't exist in the tablet world. With a tablet, what you see is what you get, and there's no way to give yourself more down the road.

The trend expanded in June, when Apple introduced the new MacBook Pro. You can't open the case without voiding the warranty. You can't upgrade the hard drive or RAM or change the battery. Some of these limitations have been true of the MacBook Air for a while, but the new MacBook Pro takes them to new levels. The biggest problem with this is that your MacBook Pro will be obsolete when the day comes that you feel the need to move to a new version of the operating system or want to add applications that it can't support. Your only choice will be to buy a new machine.

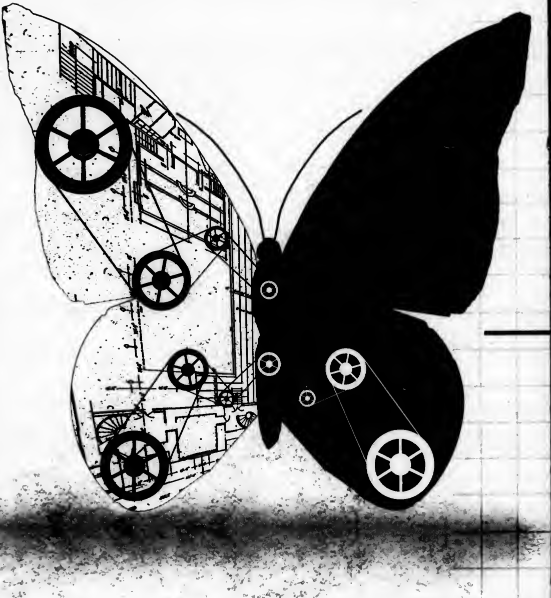
Another area of flexibility in the PC era was choice of operating system. We never had complete freedom, as noted above, but let's say you bought a new PC back in 2009. It would have come with the infamous Windows Vista installed, but it was relatively easy to install the older Windows XP — or even Linux. Now, with Windows 8, Microsoft is making it really hard to boot Linux or older versions of Windows. You can still find a way, if your tech knowledge is above average and you're persistent. But it's worse with tablets. If you buy a Microsoft Surface or Windows RT tablet, you're pretty much locked into Windows 8 forever.

But, you say, what embodies freedom more than a cloud? It's true that the cloud can eliminate some upgradability problems, since you can put not just your data but also your applications in the cloud. I like some aspects of having everything on the cloud, which is one reason I'm a Google Chrome OS fan. But more and more, the cloud has become a new road to vendor lock-in. Google apps work better with Chrome, Mac OS X and iOS are increasingly intertwined with iCloud, and Office 13 is on its way to being a Microsoft cloud-based application.

It seems as if the push to lock us into a specific platform is growing stronger. I like being able to improve my computers, whether they're on my desk or in my pocket. I like being able to choose my operating systems and programs. I don't want to return to a time when I have no choice but to use whatever the big vendors put in front of me.

I loved the PC revolution. I don't want to once again have no choice but to put my trust in black boxes and services under the control of corporations that might not have my best interests at heart. ◆

Steven J. Vaughan-Nichols has been writing about technology and the business of technology since CP/M-80 was cutting-edge and 300bps was a fast Internet connection – and we liked it! He can be reached at sjvn@vna1.com.



Rebirth OF RE-ENGINEERING

Once again, it's all about business processes. But this time around, IT is leading the charge.

BY JULIA KING

IT MIGHT GO BY THE SAME NAME, but today's slimmed-down business process re-engineering bears little resemblance to its clunky predecessor.

Twenty-five years after management guru Michael Hammer popularized the concept of business process re-engineering, companies large and small are at it again — only this time around with a few significant twists. Chief among them is the re-engineering of the IT organization itself.

Unlike the mega-projects of the 1990s that spanned multiple years and revolved around big, honking ERP systems that cost millions and produced disappointing results, today's process re-engineering initiatives feature multiple, quick-hit projects, many born out of pocket innovation labs within IT.

MICHAEL MORGENSTERN ILLUSTRATION

The methodologies are also different. Forget color-coded Gantt charts and waterfall development techniques. Today, it's all about lean manufacturing, Six Sigma and agile development.

In a nutshell, today's re-engineering is not a one-time event. Rather, it's an ongoing endeavor that involves continually refining and enhancing the hundreds of end-to-end steps involved in developing new products, acquiring and retaining customers, and making money. What it's not about is the software that automates these steps.

"You might re-engineer once, and it takes you from a 1 to a 5 in some area. But the world is changing fast, so what was a 5 quickly becomes a 3," says Daphne Jones, CIO at Hospira, a $4 billion pharmaceutical company in Lake Forest, Ill. "You have to figure out every day how to re-engineer back to a 5. It's a continuous journey."

That's why the savviest CIOs are re-engineering IT itself around those steps with an eye toward creating new streams of revenue and business value as markets advance at hyperspeed.

For example, at Boston-based John Hancock Financial Services, IT team members are organized around business processes, such as order-to-cash or procure-to-pay, rather than around various technology stacks or software applications.

"If you have people organized around the processes being delivered rather than in [technology] silos, that means those people are attentive to how the processes operate and how they need to evolve and change over time," says CIO Allan Hackney. "Re-engineering is constantly changing the status quo."

Customers everywhere are demanding greater mobile access to services, tapping into social networks and showing no signs of a weakening appetite for multiple consumer gadgets. "If you haven't figured out that you have to expose your business rules and processes in new and different ways, I don't know how you'll survive," Hackney adds.

Jones has similarly organized Hospira's IT team around business processes, or what the company calls "value streams."

"I used to have SAP people and non-SAP people, and when someone called from the business, they wouldn't know who to talk to," she says.

Now, in contrast, Hospira still has an SAP team, which deals strictly with technical issues and ERP technology. But it also has appointed relationship managers who sit on cross-functional teams organized around 12 different value streams. Now, Jones says, "when someone from the business calls, they know exactly who in IT to talk to."

Currently, the pharmaceutical manufacturer has seven of its biggest and most important projects operating in this manner, Jones says. The ultimate goal, under an enterprise initiative known as GATE, which stands for "globally aligned and transformative enterprise," is to have the entire company humming the same process-focused tune.

Moshe Schechter, director of device manufacturing operations at Hospira, is the "value stream owner" for the company's

20/20

ICHELLE SHEEDY, a process architect at pharmaceutical company Hospira, has seen it all.

As a former integration manager at Ar[illegible] Andersen, Sheedy worked on big SAP [illegible] the ERP implementation is making sure all of [illegible] fit together.

[illegible] SAP or Oracle or another ERP system, if you [illegible] agreed to abide by its rules. That [illegible] decisions to make at a granular [illegible] systems were pretty inflexible," she recalls.

[illegible] process architects are relatively new and rare [illegible] Sheedy's [illegible] is to take an enterprise view [illegible] and make sure that a change made in one [illegible] doesn't adversely impact another. Sheedy [illegible] it the "whack-a-mole effect."

[illegible] process architect is to keep an eye on [illegible]," she says. She likens the process models [illegible] library of standard operating [illegible] process [illegible] can consult before making [illegible] new processes.

[illegible] the midst of re-engineering its [illegible] processes, which [illegible] touched by eight d[illegible] within the company in some way.

[illegible] to make sure the entire life cycle [illegible] that we get an accurate performance [illegible] changes made work together and not [illegible]," Sheedy says. "The ultimate goal is to [illegible] respective improvement initiatives [illegible] their needle," she says.

[illegible] especially around ERP [illegible] lengthy projects where you'd set out [illegible] work toward for two years and [illegible] what you enabled or that it wasn't ac[illegible]. Today, business is moving too fast for [illegible] that may be a year out of date [illegible] smaller, quicker efforts.

– [illegible] KING

You might re-engineer once, and it takes you from a 1 to a 5 in some area. But the world is changing fast, so what was a 5 quickly becomes a 3. *You have to figure out every day how to re-engineer back to a 5. It's a continuous journey.* – **DAPHNE JONES,** CIO, HOSPIRA

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procure-to-stock process. The process includes all of the steps involved in acquiring raw materials, making medical devices such as tubing and infusion equipment, and finally, stocking the products in the warehouse.

Schechter's team also includes a relationship manager who is his key contact back to IT. "I know exactly where to go as a business leader," he says.

"As the value stream owner, I'm from the business side and I'm responsible for revamping the process," Schechter emphasizes. In previous re-engineering efforts elsewhere, "IT had business analysts who were re-engineering the processes so they could launch technology. There was no buy-in from the organization being re-engineered," he says, adding that "one of the biggest lessons learned is that re-engineering has to be a part of everyone's goals."

Jones puts it this way: "People, processes and technology go together for a reason. It's the people who change the process, and it's the process that is accelerated or automated because of the technology."

Scott Hicar

Pick Up the Pace

Speed and rate of change are perhaps two of the most significant factors in today's re-engineering efforts, says Scott Hicar, CIO at DigitalGlobe, which operates three Earth-imaging satellites and processes massive volumes of data used for everything from assessing disaster damage to providing location-based mobile services.

"If you think back to traditional re-engineering, there was the 'as is' and 'to be' implementation plan. There was a lot of thinking up front about the end state," says Hicar. "In today's world, growth happens so fast and technology is so pervasive and evolving at such an incredible rate that anybody who thinks they can step back and guess the end state five years from now is probably going to have a very high error rate."

By way of example, Hicar notes that one of DigitalGlobe's first big customers wanted its images for car navigation. DigitalGlobe provided images on which roads and highways could be electronically traced, and the software was ultimately built into the customer's car navigation workflow.

But DigitalGlobe's next big customer wanted images that could be segmented for presentation on its own website. Hicar's team responded by building a so-called "tiling engine" that enabled it to chop up the images into smaller images that the customer could present online as customized maps.

"We processed 45 billion tiles for that customer," he says. At the same time, DigitalGlobe IT re-engineered itself and the content of its cloud-based image repository in a way that could serve other customers down the road.

"We're constantly re-engineering to create value for our customers," Hicar says.

Fail Fast, Move Forward

To do that successfully, speed and agility are absolute musts, CIOs say.

That's the main reason so many projects are short in duration, and it's behind the emphasis on "failing fast and moving forward." The idea is to try new and innovative ways of creating business value and, if they don't work, to move on — quickly.

Agile and iterative development methods are the best way to do this, CIOs say.

"You have to apply lean practices and agile methods," says Helen Cousins, CIO at Lincoln Trust in Denver. "The faster you know you're going the wrong way, the quicker you can fix it."

Cousins, who was involved in major, ERP-intensive re-engineering projects at various companies during the 1990s and 2000s, considers the need for speed to be one of the greatest lessons CIOs learned from earlier re-engineering efforts.

Big ERP projects usually turned out poorly because they cost a lot and took a long time to deliver any real efficiency, she says. "The CIO's role now is more about how to drive revenue to the bottom line as opposed to constantly cutting costs," Cousins notes, adding that "you have to deliver incremental benefits to the business every six to eight weeks."

At Capital One Financial, the company's online and mobile

INNOVATIVE BUSINESS PROCESSES:

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Business processes are so critical to Lincoln Trust that top management views them as strategic assets.

"Process is just as much an asset as people," says CIO Helen Cousins. "Before, it was looked at as just a way to get work done."

In fact, Cousins says, a recently re-engineered self-service process for IRA customers was a big factor in Pensco Trust's acquisition of Lincoln's self-directed IRA business. "No one else who does self-directed IRAs enables clients to go on a website and do their own distributions," says Cousins. "It's one of the big things that helped us sell that part of the company."

Re-engineering the distribution process was accomplished using lean practices and agile development methods – an approach that delivered benefits to the business every six to eight weeks, Cousins says.

"We first delivered a wizard to do the online application, then integrated that with the workflow system and then integrated that with back-end trust management systems," she explains.

"We wanted to make sure that whatever process we tackled, we did it in a way that was incrementally beneficial," she says. "It's just common sense. You deliver a little at a time."

— JULIA KING

MICHAEL MORGENSTERN ILLUSTRATION

channels are the primary drivers of this need for speed, says CIO Rob Alexander.

"We see rising expectations from business customers all the way through to end customers for what we do in IT," he says. "They want to interact how they choose, and they want products and services when they want them."

What's more, Alexander says, "customers' expectations aren't being driven just by their experiences with competing banks. They're being shaped by Amazon and Google and the best companies out there at delivering online experience."

Rob Alexander

What's notable is that the process re-engineering effort at Capital One is being led by IT "and will then have a ripple effect out to the lines of business," according to Alexander.

Last year, Capital One launched a major transformation effort in IT, committing to deliver all software through agile development methods. Alexander says it helped that when Capital One acquired ING Direct last year, it also acquired "a 100% agile IT shop, so we got a critical mass of tremendous agile talent."

The other key area Alexander is focused on involves consolidating the bank's 30-plus data production and operation sites into two data centers running a standard set of technologies.

"Before, we had custom handcrafted technology stacks for each application," Alexander says. Standard technologies will enable IT to quickly deliver new services to Capital One's all-important base of ever-demanding mobile and online customers.

"This is really a big deal for us," Alexander says. "It's changing how we do work and also our combination of resources and skills. It will put us in a much better competitive position in the market."

Changing Skills

Capital One isn't alone in its need for a new and different mix of skills in its re-engineered IT organization. Virtually all IT executives involved in re-engineering or transformation efforts list talent acquisition as a major challenge and priority.

"The most important thing that has changed is that we need a richer mix of associates," says Alexander. Specifically, Capital One is seeking out professionals with business and process knowledge and agile software development skills.

Kim Johnson, CIO at Graham Group, a midsize construction management company based in Calgary, Alberta, says the role of business analyst is taking on greater importance at his company and others. It's critical that business analysts have technical knowledge combined with "a very good understanding of the problem domain," Johnson says.

Traditionally, Graham Group, like many other companies, embedded business analysts in the IT organization. They would venture forth to the business, collect and interpret requirements and bring them back to IT.

Now, Johnson says, "when we talk about business analysts, we're talking about embedding a portion of the IT function into the business. As the problems have become more complicated and the company has grown and there is increased specialization, we're shifting the business analyst role into the business."

6 TIPS

The most successful re-engineering efforts are externally focused

Lean, agile and iterative software development methods are essential to creating flexible processes

Projects should deliver business value every six to eight weeks

Organize IT around business processes

Technology automates processes

Technology must be flexible, too

The upshot: "Today, I weigh business skills heavier than technology skills" in recruiting, Johnson says. High on his list of desired skills are the ability to drive collaboration, the ability to understand business requirements and translate them into a technical format and the ability to facilitate and integrate multiple perspectives.

Graham Group is also organizing most of its IT and business employees around various business processes. Additionally, there is a purely technical organization that is home to highly specialized technical workers.

"The days of the general software developer are long gone," Johnson says. Instead, Graham Group recruits candidates or hires service providers according to very specific platforms, the type of project and the type of software development.

The bottom line, according to Hicar, is that customers — not technology — determine how and where IT at the company will create business value in the future.

"Our vision is that business value will be determined by how people are using our imagery to create their own business value," he says. "We don't know yet what the most important value is going to be and which will emerge in the market, so we're building for flexibility.

"The reality now is that we know the world won't be what we thought it would be," Hicar adds. "We can't outguess technology evolutions."

In other words, we can expect the future will hold more re-engineering efforts implemented in a decidedly new manner. ◆

channels are the primary drivers of this need for speed, says CIO Rob Alexander.

"We see rising expectations from business customers all the way through to end customers for what we do in IT," he says. "They want to interact how they choose, and they want products and services when they want them."

What's more, Alexander says, "customers' expectations aren't being driven just by their experiences with competing banks. They're being shaped by Amazon and Google and the best companies out there at delivering online experience."

Rob Alexander

What's notable is that the process re-engineering effort at Capital One is being led by IT "and will then have a ripple effect out to the lines of business," according to Alexander.

Last year, Capital One launched a major transformation effort in IT, committing to deliver all software through agile development methods. Alexander says it helped that when Capital One acquired ING Direct last year, it also acquired "a 100% agile IT shop, so we got a critical mass of tremendous agile talent."

The other key area Alexander is focused on involves consolidating the bank's 30-plus data production and operation sites into two data centers running a standard set of technologies.

"Before, we had custom handcrafted technology stacks for each application," Alexander says. Standard technologies will enable IT to quickly deliver new services to Capital One's all-important base of ever-demanding mobile and online customers.

"This is really a big deal for us," Alexander says. "It's changing how we do work and also our combination of resources and skills. It will put us in a much better competitive position in the market."

Changing Skills

Capital One isn't alone in its need for a new and different mix of skills in its re-engineered IT organization. Virtually all IT executives involved in re-engineering or transformation efforts list talent acquisition as a major challenge and priority.

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6 TIPS

The most successful re-engineering efforts are externally focused [illegible] an emphasis on increasing [illegible] value than on cutting costs or creating [illegible] efficiencies.

Lean, agile and iterative software development methods are essential to creating flexible processes. [illegible] end state and work [illegible] unrealistic.

Long [illegible] a project [illegible] chance of failure. **Projects should deliver business value every six to eight weeks.**

Organize IT around business processes, not around the [illegible] applications that [illegible]

Technology automates processes. It shouldn't [illegible]

Business [illegible] **Technology must be flexible, too.**

[illegible]

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In other words, we can expect the future will hold more re-engineering efforts implemented in a decidedly new manner. ●

Should the CIO *Know* How to Code?

Nontech CIOs are all the rage these days. Is that good or bad for IT? **BY HOWARD BALDWIN**

[redacted]

ON THE ORGANIZATIONAL CHART between IT director "Ray Walton" and his CIO is a vice president of IT whom Walton considers dangerous.

Why? Because that VP came from finance. He's not technical, and worse, he maintains a financial mindset. "In his mind, everything in technology can be reduced to dollars and time," says Walton, who, to protect his job, asked that his real name not be used.

Walton angrily maintains that this finance-first attitude works only when everything is a commodity, which hasn't yet come to pass in technology. "It's still an art to determine risk and rewards in IT. If you only look at ROI, you'll never build a network, because it's infrastructure. There is no 'payback.' "

But, in Walton's view, the VP dismisses that argument because he doesn't understand technology and can't

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intelligently interact with either network or software engineers. "He's a leader of IT, but he doesn't understand technology," he says. "That's a problem because he doesn't take it into account in his decision-making."

Walton's employer isn't a first-year startup, and his experience isn't an isolated occurrence. Rather, Walton works for a Fortune 500 company that's a household name, and his situation is, in fact, part of an increasing trend.

Recent statistics are hard to come by, but a 2005 Forrester Research report states that 39% of CIOs in large companies come from outside IT. That figure is corroborated by a wave of anecdotal evidence from consultants and industry watchers — including Jack Cullen at IT staffing firm Modis, Suzanne Fairlie of executive search firm ProSearch, and Forrester analyst Bobby Cameron — who agree that more companies are moving executives into the CIO role from other places within the organization.

The very strong feelings of techies like Walton notwithstanding, these observers say the question is not so much whether hiring nontechnical CIOs is right or wrong, but rather, how do you make having a nontechnical CIO work? After all, there are ways nontechnical CIOs can make their companies stumble and ways they can make them rumble.

As technology becomes inexorably woven into everything a business does, it's crucial to have someone act as a "translation layer" between the two sides, experts say. Whether that person is a nontechnical CIO who can articulate the value of IT or a lifelong techie who gained business savvy moving up the ranks, he not only has to know what questions to ask and how to bridge the gap between business and IT, but he also has to know what he *doesn't* know.

"In the emerging IT organization, CIOs are more frequently looking at issues around business strategy and how technology can enable that," says Cameron.

The Nontech CIO, Done Wrong

Two schools of thought emerge in discussions about CIOs who don't have technical pedigrees and the people who report to them. One faction believes that nontech CIOs bring greater insight into the needs of the business. The other believes that in order to lead IT, you have to have come up through IT.

"There's a difference between understanding it intellectually and knowing it in your gut," maintains Dan Gielan, a Los Angeles-based IT consultant who says he's quite familiar with the opposite scenario — CIOs without any fire in the belly. "If you've experienced [a given technology], you know how difficult or how easy it is."

Gielan says he has encountered what he considers to be too many people in IT who have never coded software but still have to make decisions about software projects. "This is not good," he says, adding that the same applies to having some capabilities in networking or systems administration.

One of the exacerbating side effects of this state of affairs is the perceived simplification of IT, critics say. Seemingly anyone who has shopped in a computer store thinks he understands technology. But laypeople don't understand, for example, why a disk drive costs more when it's installed in a SAN than it does at their local retailer, laments Walton. They think they've done programming because they've created Excel macros or know HTML — but they haven't, he insists.

Peter Connolly is IT director at KP Direction, a Web development firm in Syracuse, Utah. Earlier in his career, in the 1990s, he was brought in as an IT manager at a top advertising agency where the finance director had doubled as the IT manager before Connolly was given those duties. Connolly says his predecessor, a computer hobbyist, may have understood personal computing, but not business computing — he was, Connolly says, someone who "didn't know what he didn't know."

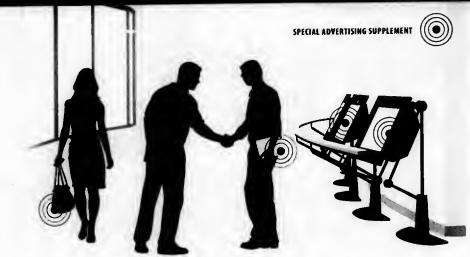
"When I came in," he remembers, "the network was so slow that employees preferred to carry disks up three flights of stairs. The agency had three sites, but my predecessor didn't understand why they had to be networked. If it was outside his comfort zone, he ignored it.

> **There's a difference between understanding [tech] intellectually and knowing it in your gut.**
>
> **DAN GIELAN,** IT CONSULTANT

"But even after I replaced him," Connolly continues, "he still wanted the final say on everything because I reported to him in his new position as operations manager. He did this even though the chairman told him he couldn't do both his job and mine."

In frustration, Connolly resorted to commandeering office copies of computer publications, highlighting references to technology he thought the agency needed and putting them on his boss's desk. "Because they were office copies, he never knew whether I had done the highlighting or the head of the agency had," Connolly recalls.

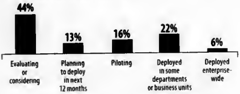
Forrester's Cameron says he's been brought in multiple times as a referee when communication had broken down, which can occur if a nontech IT executive distrusts those who know the technology or fears they will show him up. That can create a vicious cycle where the lack of communication ends up slowing down IT operations — and bringing in outside consultants to adjudicate on IT strategy disagreement can get expensive, Cameron says.



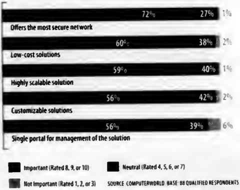
M2M Communications: Priorities and Pain Points for IT

MACHINE-TO-MACHINE (M2M) COMMUNICATIONS is gaining momentum in the enterprise. In a Computerworld Quick Poll survey, 28 percent of respondents say they have deployed M2M to some degree across their organization, and nearly one-third are piloting or planning to deploy M2M technology over the next 12 months.

Deployment of M2M Technology



Evaluation Criteria for M2M Solutions



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M2M solutions let organizations monitor and service geographically dispersed assets such as utility meters, production-line technology and ATMs. Establishing insightful connections between machines can help businesses optimize performance and capture new business opportunities. The technology is increasingly used in areas such as smart vending (think Redbox), fleet management (for monitoring vehicle performance, delivery routes, even cargo temperature), telemedicine, utilities (smart meters), and digital signage.

As with any emerging technology, enterprise IT is slowly building its skills for deploying and managing M2M solutions. Key areas of expertise required for M2M communications include security and risk, IT project and vendor management, solutions integration and wireless networking.

An emphasis on security underscores the need to protect sensitive data as it transmits across public networks. Nearly two-thirds of respondents said security is an important factor when evaluating M2M solutions.

"Anytime you're dealing with high-value assets, security is a valid concern," said Richard Williams, executive director of vertical business solutions at Verizon Enterprise Solutions. "Enterprises need assurances that connections are secure at each and every endpoint across a private network."

Several other evaluation criteria also scored high, including cost, scalability, customizability and end-to-end functionality. In addition, 51 percent of respondents said a single management view of M2M solutions was important during or after deployment.

M2M holds a great deal of promise for enterprises across a wide range of industries. Organizations that can harness the power of M2M today will be laying the groundwork for broader business transformation in the future.

To read more about the results of the Computerworld Quick Poll survey, download our new report, "M2M Makes a Business Connection" at www.cio.com/whitepapers/verizonm2m

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The Nontech CIO, Done Right

In contrast to their vindictive or just plain incompetent counterparts, productive, well-adjusted nontechnical CIOs appreciate their tech-savvy employees. These are leaders who know what they don't know. They're good at asking the right questions, probing for further insight and then framing the answers in ways that the business side will understand.

"I know how to ask what I call 'the daft question,' " says Mark Bramwell, head of IT at Wellcome Trust, a London-based global charitable foundation focusing on biomedical research. "I can ask what happened, why it happened, and how are we going to prevent it from happening again."

Cameron, a strong advocate of business-centric CIOs, says, "CIOs shouldn't care whether it's agile versus waterfall. They should pick whatever works best to achieve the business results necessary, and that decision should be made by someone further down in the development structure."

Cameron acknowledges that in a smaller IT organization, of course, the CIO does indeed need to have technical, hands-on credibility. But as a company grows, so too does the need for a CIO who opts for business-speak over tech-speak, he says.

> **My team may speak in technical terms, but I play it back to them to make sure I understand what they've said.**
>
> **MARK BRAMWELL,** IT HEAD, WELLCOME TRUST

At the same time, nontechnical CIOs shouldn't allow techies to buffalo them. "IT sometimes hides behind the jargon," Bramwell says. "My team may speak in technical terms, but I play it back to them to make sure I understand what they've said."

If one of his employees is talking about why the organization needs clustered servers, for instance, Bramwell takes the time to tease out a business reason — to balance loads for optimum performance, for example. "You have to peel back the jargon and make it clear and concise" for the business team, he says.

Beyond that, the nontechnical CIO has to remind his employees that their job is to protect the business, not to adhere stubbornly to technology for technology's sake. "I tell my people that they're the authorities in storage and networking. I try and empower them to focus on the business benefit and move the business forward," says Bramwell.

Connolly had the good fortune to have a positive encounter with a nontech CIO to counterbalance his early experience at the ad agency. When his meddling boss was moved to operations, Connolly began reporting to and working closely with a new finance director. The first thing his new manager acknowledged was that she knew nothing about IT — but she also said she didn't need to as long as Connolly did.

It turned out to be a great relationship. The pair started with the business plan and used it to create an IT strategy.

"She was confident in me because she knew I knew IT," Connolly says. "If I said we absolutely needed something to make the transition to a digital agency, she said she'd find the money. It was very much a team effort with a lot of mutual respect."

What's Needed: A Translation Layer

Ultimately, the question of whether a CIO should have a technical pedigree is moot, experts agree. No matter what their backgrounds, CIOs have to function as a "translation layer" between IT and business. In other words, they must have either translation skills gained from coming up through IT or, if they came up on the business side, the ability to extract from their staff the insight they need.

That concept works both ways. "If you're not a technical CIO, you need to surround yourself with good technologists," says Walton. "If you are, you need to surround yourself with people who are business-savvy."

Bramwell concurs. "My career has been based on being customer-focused, and acting as a bridge and translator to IT, rather than having technical knowledge," he says. "In turn, I can interpret what they say into words of one syllable." Put another way: He can't configure a server, but he doesn't need to — he just needs people who can.

Furthermore, Bramwell believes that the entire IT department must have the ability to move closer to the business. "I look for people who understand what good customer service means. It doesn't matter whether it's application development or procurement; I look for IT people who can have a conversation with the customer, someone who can represent IT eloquently and who takes personal ownership for delivering against promises."

Notwithstanding the need for technical expertise, those soft skills may be even more important in the long run.

"If someone needs technical skills, you can send them to training classes. It's harder to find someone with those behavioral skills," Bramwell says.

Cameron agrees, emphasizing that this type of behavior starts at the top. If CIOs can't understand what the business needs, translate that into technical capabilities and explain why those technical capabilities match the business strategy, then no one wins. "There's still a huge gap between IT and business," he says. "We need more business-savvy CIOs, not fewer." ◆

Baldwin, *a freelance writer based in Silicon Valley, writes about networking and mobile technology.*

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A VIRTUAL DESKTOP IN THE CLOUD

Developing mobile applications for the cloud can be tricky work.

Here's how to choose a platform and decide if your back-end systems are up to the task.

BY BILL CLAYBROOK

WHAT'S EXPANDING at the same blistering pace as your company's mobile workforce? How about the demands those users are making for a software experience that rivals the one they get on a desktop?

For many companies, a private cloud is the answer. But if you decide to power your mobile workers centrally with a private cloud, your mobile applications need to be developed with that infrastructure in mind.

Several factors are in play here, especially if you want applications that can work on all mobile devices, desktops and notebooks. What is required to get existing applications to work with mobile devices when the apps are running remotely on a cloud? How do you resolve the problem of fitting data from an application designed for the desktop onto the smaller mobile device screen? Should you develop for mobile devices first, and port to desktops and laptops later?

Tony Iams, an analyst at Ideas International, an IT research firm, says it's important to determine what part of the application's state — the code and/or the data itself — is being moved up to the cloud from the mobile device. "Moving state to the cloud gives you back-end manageability benefits because you do not have to maintain that state on the mobile device," he says. In other words, all changes or application updates are made centrally.

Mobile cloud computing means that the processing of applications — and the storage and retrieval of data — is performed by a cloud-based infrastructure. It results in a total cost of ownership savings because IT staffers don't need to update individual devices — the client software environment is running on a server in the cloud, and changes made there show up on every client.

From the user's point of view, there is a convenience benefit, too, because you can now get to your desktop — a virtual desktop in the cloud — no matter where you are, through a browser on a mobile device. "You always have the same desktop environment no matter what remote device you are using," says Iams.

Because there are different types of users and different types of devices, you have to be ready to support multiple versions of your apps. This means being prepared to support different screen sizes and devices made by multiple manufacturers.

Get a Mobile Platform

One way to ease the task of providing application support for multiple types of remote devices is with a mobile platform, says Jeff Deacon, director of corporate strategy at Verizon Business. A mobile platform is the software between the mobile device and the app and the data. It runs on the cloud and does some tasks specifically for mobile devices, such as converting data into a user-friendly format and making sure everything fits well on the screen.

It also has an authentication mechanism that reaches all the way to the device, so the device can be wiped remotely if it is lost or stolen.

With a mobile platform, back-office applications are isolated from unauthorized users who might back into the applications via Multiprotocol Label Switching. The platform secures the mobile device and then does the conversion.

These mobile platforms are more formally called mobile enterprise application platforms (MEAP). They allow you to deploy mobile apps across a variety of devices without having to implement an app for a specific device. They also allow you to selectively run applications natively on the device in cases where it's important to take advantage of key features of the device or when it would be difficult to emulate native functionality on a server in the cloud.

This is one of the directions that the market is moving toward, but MEAP tools are in the early adoption stage and most enterprises still don't know much about them.

> **We have to be able to interact, and have good functionality and almost seamless interconnectivity once connected.**
>
> **ERIC MILLER**, CIO, ERIE INSURANCE

Deacon says Verizon uses a multitenant system, the Sybase Unwired Platform, to reduce the complexity of developing mobile apps and deploying them across a variety of devices and back-end enterprise servers. Other MEAP or MEAP-like platforms include WebMobi, AMPchroma from Antenna Software, Agentry Mobile Platform from Syclo and Appcelerator Titanium.

Mobile apps come in one of two forms: those native to a specific device, and those accessed through a browser (also known as mobile Web apps). A mobile Web app is usually built with HTML (today this would be with HTML5), Cascading Style Sheets (CSS) and JavaScript. Style sheets provide the look and formatting for documents written in a markup language such as HTML5.

A native mobile app, on the other hand, is built specifically for a particular device and its operating system.

Mobile Web apps have an advantage over native mobile apps because they offer cross-platform compatibility; on the downside, mobile Web apps aren't always able to take advantage of the latest technology on a specific device.

Kamesh Pemmaraju, an analyst at Sand Hill Group, says that in addition to MEAPs, hybrid approaches that make use of HTML5 are emerging as a way to develop mobile applications with cross-platform capabilities.

Hybrid application development blends the native and mobile Web app approaches. With a hybrid mobile app, most of the user interface — or even the entire thing — is in a browser window with a native app wrapped around it to provide access to native device features not available with the browser.

To a user, a hybrid app looks like a native app. But to developers, there's a big difference. Rather than rewriting the entire mobile app for each mobile device, some of the code is written in HTML5, CSS and JavaScript and then reused across different devices.

Dealing With Speed and Access

One of the downsides of the mobile cloud model is that users can experience latency and intermittent access problems when they try to use applications that reside in the cloud, says Deacon. But this isn't a big problem for many of the applications that businesspeople use in the field. The applications that experience latency problems are usually ones that involve voice and video; they aren't the typical enterprise tools that are designed for reading email or querying databases. "While latency and intermittent access may be bothersome, it is not that big of a deal for many users," Deacon says.

Eric Miller, senior vice president of IT and CIO at Erie Insurance, has had some problems with intermittent access in corporate mobile applications, primarily those used by claims adjusters. For example, one application collects information in the field and executes store and forward routines, but that process can be interrupted if the connection is lost. "We have to be able to interact, and have good functionality and almost seamless interconnectivity once connected," Miller says.

HTML5 can help with intermittent access issues by using something referred to as on-device caching. This feature allows data to be stored offline on the remote device for further processing, reducing the problems created by interruptions in mobile connectivity.

The net result of on-device caching is that fewer round-trips are required between the remote device and the mobile cloud server, allowing apps to run effectively on the mobile device even when mobile connectivity is discontinued.

One of the best examples of the use of on-device caching is with Google Maps for Android. Map data is preloaded on the remote device for those areas where the user transmits most often, ensuring continuity of use even if the satellite signal is lost.

Check the Back End

Generally speaking, enterprise clouds are up to the task of handling mobile applications, says Bernard Golden, CEO of consultancy HyperStratus. If you have some sort of cloud-based infrastructure that already has virtualization and automation, you should be able to add services like identity management to handle mobile devices, he says.

"Part of your IT strategy should be to extend your core services," like identity access management, so the services can be used by any application running on any device, he says. "In effect, you need to create APIs that can be called by applications, no matter what form factor they are running on." The APIs need to be in mobile-ready formats that can be used by both mobile developers — internal and third party — and the apps they create.

The goal is not to approach this as, "I need to build a custom extension for the iPad," Golden says. "The iPad is just one device. There will be dozens, so you need application APIs and components that are portable."

API-as-a-service vendors — including Layer 7 Technologies, Apigee and Apiary — can help here, because they offer API management tools. These tools can be implemented in the mobile cloud.

Some customers have novel approaches to this issue. Mohawk Fine Papers, for instance, is using the cloud itself as an integration platform.

Richard Peltz, CIO at real estate investment service Marcus & Millichap, says his company doesn't build its own mobile apps. It has outsourced this task to AT&T, because AT&T already has the expertise, he explains.

Down the road, Peltz sees Oracle and other companies providing portals — private or public — where users with the right credentials can access customized apps that are rendered automatically to various devices, including mobile devices.

Marcus & Millichap is currently implementing a content management system (CMS) developed by SiteCore that will automatically render to any mobile device, eliminating the need for Marcus & Millichap to write device-specific native apps, as it has done until now.

The company expects to complete the CMS deployment by early 2013 in its VMware-based private cloud, at which point the corporate website as well as the intranet will migrate to the new CMS platform. End users will manage the content.

Think Mobile First

Miller says Erie Insurance thinks mobile first for all of its applications and then ports them to PCs when possible and when it makes sense. Erie is moving strongly toward the use of mobile devices, so developing for mobile first is a good strategy, he says.

But that strategy does present challenges. A mobile device generally has much less memory, processing power and other resources than a PC does, meaning mobile developers face design constraints that aren't present in other platforms. In addition, mobile apps are often designed to take advantage of hardware features on mobile devices that may not be readily available on PCs.

Miller says that one of the questions that Erie's usability group has to wrestle with is, "Do we build a Web portal that adapts itself based on the device that is coming into it, or is it a specific app?"

Most mobile app use at Erie involves submitting data to a back-end application that just collects it. The company has only a few back-end applications that let mobile users access data and then send the data out to the user's device and maybe store it there temporarily. Data downloaded to a mobile device is encrypted and a certificate is downloaded to the device that authenticates the user.

Some service providers, such as Google, already offer mobile cloud services, which are accessed through a browser running on a smartphone or tablet. But most mobile apps are downloaded from a vendor's app store and run in native mode on the device. This requires a separate development effort for each type of mobile device. A mobile cloud infrastructure enables users to work directly from the cloud, viewing the client interface through their device browsers.

But the use of a mobile cloud doesn't eliminate the need for in-house development. Each app still has to be developed; the difference is that only one development project is required to build an app that can be accessed by many kinds of devices. New development tools, including HTML5, help with those efforts. And though there are still some smartphones that don't support HTML5, it's only a matter of time before all of them do.

As more and more mobile apps and data are stored in the cloud and run on cloud servers, it's likely that less powerful, less expensive smartphones will begin to hit the market and gain acceptance among users. Stay tuned. ◆

Claybrook *is an analyst with more than 30 years' experience in the IT industry. He can be reached at bclaybrook@comcast.net.*

Security question #21

Are you using the highest overall protection Next-Gen Firewall recommended by NSS Labs?

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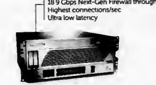

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Security Manager's Journal

MATHIAS THURMAN

DLP Tool Suddenly Blind to Email

WE HAD been making good progress in demonstrating the value of our still limited deployment of data leak prevention (DLP) technology until a setback a couple of weeks ago. Ironically, the setback was due to an expansion in the use of encryption, something that I would normally embrace wholeheartedly.

Some background: We rolled out DLP earlier this year, but with resource constraints; I've been seeking more backing for this technology by proving its worth in protecting the company's intellectual property. Given a tight budget, we decided it would be most effective to deploy DLP in a limited but highly targeted way. For example, we aren't alerted about every document containing the words *confidential* or *restricted* but instead rely on a recent audit that identified specific documents containing key sensitive data. This short list of highly sensitive data includes product road maps, source code, price books, business development plans and confidential financial data.

[illegible] about computerworld.com/blogs/security

Meeting with representatives of each functional unit, we learned that some of these documents are stored in Microsoft SharePoint libraries and others on Unix Network File Shares or Microsoft CIFS File Shares. For example, the vice president of sales told us that price books are stored within a departmental share on a Windows file server and then sent out via email to a distribution list. With that information, we were able to configure our DLP software to automatically index that file share once per day, with the index matching so tight that even a small portion of the price book that was pasted into another document or email message could be identified.

Where Did It Go?

As a demonstration for management, we copied part of the price book, which is an Excel spreadsheet, and pasted it into an email message that was then sent to a webmail account. This triggered an alert notifying us that the email contained data from the price book. Score one for DLP. But a couple of weeks ago, this demonstration started to fail, because we were unable to see any of our Microsoft Exchange email traffic.

The setback was due to an expansion in the use of encryption, something I would normally embrace.

Trouble Ticket

» Suddenly, the data leak prevention tool can't see any Exchange mail on the network.

» Figure out what's wrong, and then find a way to make the mail visible again.

All the other network traffic was still visible; what happened to the Exchange traffic? The Exchange administrators told us that they had recently upgraded to Exchange 2010, which uses what is called opportunistic TLS to automatically encrypt all traffic between the Exchange server and our spam-filtering mail gateway, in the cloud. In addition, we are slowly migrating our on-premises Microsoft Exchange servers to Microsoft O365, a hosted Exchange environment that also encrypts traffic.

The problem is that our DLP monitors network traffic via a SPAN port and can't see encrypted traffic. I now have to deploy proxies to decrypt the SSL packets, pass the traffic to the DLP for inspection and then re-encrypt the traffic to its destination.

When I discussed this issue with my firewall engineer, he mentioned that our Palo Alto Network (PAN) firewalls could decrypt SSL traffic. That sounded like an easy and inexpensive way to inspect our traffic, but unfortunately, the PANs aren't ICAP-compatible. ICAP, which staods for Internet Content Adaptation Protocol, is the mechanism by which unencrypted SSL traffic is passed to our DLP for inspection. That means that I'm going to have to wait until 2013 to buy another tool, unless I can find a low-cost alternative.

One option we've been thinking about is Squid, which is an open-source proxy. But being open source, Squid doesn't come with any support, so it's not a long-term solution. The one thing that's certain is that we can't continue operating blind. ◆

This week's journal is written by a real security manager, **"Mathias Thurman,"** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

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MATHIAS THURMAN

Trouble Ticket

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Data leak prevention can't be effective if it can't see any Exchange mail on the network. What happened?

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PRESTON GRALLA

Lawyers Taking Tech Crown From Engineers

Billions are at stake as tech companies use their patents to seek competitive advantage.

VENDORS STILL TALK as if engineering innovation were the king of tech, but they are in the process of conferring that title on the lawyers. Microsoft, Apple and Google are among the tech companies that are increasingly seeking competitive advantage not from their research labs and design suites, but from lawyers and the courts. Billions of dollars and vast markets are at stake.

Google is a good place to start to understand the shift. In May, Google bought Motorola Mobility for $12.5 billion, which seemed to be a very high price for a company that had been surpassed by competitors — notably Samsung and HTC — in the cutthroat mobile business.

Many people believed that Google was mostly interested in Motorola's cache of 17,000 patents, not its hardware or engineers. In a mobile landscape increasingly dominated by tit-for-tat lawsuits, those patents are an important means of self-defense.

In mid-August, Google lent credence to that view by announcing plans to lay off 20% of Motorola's workforce. On the same day it made that announcement, Google made a filing with the Securities and Exchange Commission that noted that Motorola had lost money in 14 of the previous 16 quarters. A company in such bad financial shape must have something other than its primary business to make it worth $12.5 billion. Those thousands of patents certainly seem to be the attraction.

So is that it? Does Google just want Motorola's patents? Following the layoff announcement, Jeff Kagan, an independent analyst, told *Computerworld*, "Everyone at Motorola is asking and fearing the answer."

Google can't really be blamed for this. Both it and its partners have been sued by Apple and Microsoft, which claim that Android violates several of *their* patents. The tactic has worked for Microsoft, which launched a massive legal broadside against makers of Android devices, claiming that they infringed on Microsoft patents. Most of those device makers have decided to pay Microsoft licensing fees rather than fight.

You might wonder why vendors find these patent lawsuits worthwhile. The answer: easy money. Analyst firm Trefis claims that just two companies, Samsung and HTC, paid Microsoft $792 million in royalties in a single quarter. Microsoft lawyers Brad Smith and Horacio Gutierrez wrote in a blog back in October that Microsoft had patent deals in place that bring in royalties for more than half of all Android smartphones sold in the U.S. And while that revenue stream is nothing to sneeze at, an even bigger advantage for Microsoft might be that the royalties will drive up the prices of Android phones, making Windows Phone devices more price-competitive.

Meanwhile, Apple's suit against Samsung resulted in a big judgment for Apple, which had charged that Samsung Galaxy devices infringed on various Apple mobile patents. Apple was awarded over $1 billion in damages, well short of the $2.5 billion that an accountant testified Apple could be due, but nothing to sneeze at. Potentially more important are changes Android device makers may have to make.

These are just a few of the most visible lawsuits. There are countless others, spanning the globe.

I can't say that I know which of these lawsuits have legal or moral validity. But that's not really the point. The point is that, in the tech world today, it might be more important to have good lawyers than it is to have good engineers. ◆

Preston Gralla is a *Computerworld.com* contributing editor and the author of more than 35 books, including *How the Internet Works* (Que, 2006).

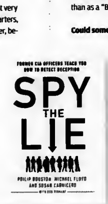
Career Watch

Q&A

Don Tennant

The former Computerworld *editor in chief and co-author of the* New York Times *best-seller* **Spy the Lie** *discusses the art of detecting lying.*

How good is the average person at detecting lies? Not very good at all, and there are a lot of reasons for that. For starters, we have a natural inclination to want to believe each other, because branding someone as a liar is pretty heavy stuff. Another obstacle is that we all have biases that have a huge impact on whether or not we believe people. You can't magically get rid of your biases when you speak with someone, but the methodology we present in the book enables you to manage them so you don't have to think about them in a deception-detection encounter. And there are a lot of behavioral myths that people tend to rely on when they try to distinguish truthfulness from deception. For example, it seems to be almost universally accepted that poor eye contact is an indicator of deception. But the fact is, eye contact is a very individualistic behavior that makes it very unreliable as a deceptive indicator.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PHILIP HOUSTON MICHAEL FLOYD
AND SUSAN CARNICERO

How can we be better at spotting when someone is lying? By adopting a systematic approach that takes the guesswork out of the equation and filters out extraneous information so you don't have to process it. That includes ignoring truthful behavior. It seems rather paradoxical that you need to ignore truthfulness in order to uncover the truth, but it's an essential element of our methodology, which is a stimulus/response approach that has its roots in the polygraph experience. A polygraph detects physiological responses to a stimulus, the stimulus being a yes-or-no question. Our methodology examines verbal and nonverbal indicators exhibited in timely, direct response to a question. That way, you're able to prevent yourself from being influenced by information that may well be truthful but doesn't directly respond to the question. It also enables you to filter out what are called "global" behaviors, like body positioning and general nervous tension, the cause of which you can only guess at.

How should techniques like watching for "tells" be employed in the workplace? With the understanding that nothing in our book, or any other book, will make you a human lie detector, because there's no such thing. When you employ our methodology to spot deceptive behaviors in a situation where you're, say, interviewing a job candidate, speaking with an employee about unacceptable behavior or listening to the boss talk about the organization's financial performance at a company meeting, if you spot deceptive behavior, think of it as a heads up that the situation warrants further attention, rather than as a "Book him, Danno" moment.

Could someone read your book and erase all the tells from their conversational schtick? Nope. The methodology we're sharing can make you a whole lot better at *detecting* deception, but it doesn't make you any better at all at *executing* deception. As we explain in the book, you can certainly identify ways to try to avoid waving a red flag. But in any given encounter, there is so much conflicting information to process, and so many behavioral elements to consider, that your brain simply can't keep track of them all. You may be able to avoid exhibiting one deceptive behavior, but others will trip you up every time. We've found that our brains tend to do what they do, and we just follow along.

– JAMIE ECKLE

MONSTER BRINGS FACEBOOK INTO THE JOB SEARCH

In an effort to make online networking easier for people looking for jobs, Monster has integrated its BeKnown app into its job search site. BeKnown connects to the job searcher's Facebook profile so it can inform the user about which of his friends are associated with a particular employer. It's still up to the job seeker, though, to reach out to the friends to see whether they can use their insider influence to help him land an interview.

24%

Portion of 2012 college graduates who are using social media to do research on potential employers. That's up from 15% for the Class of 2010.

SOURCE: NATIONAL ASSOCIATION OF COLLEGES AND EMPLOYERS' 2012 STUDENT SURVEY OF ALMOST 40,000 COLLEGE STUDENTS ACROSS THE U.S.

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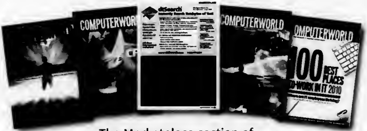

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Source: "Harvey Ad Measurement Study, Computerworld May 10, 2010

IT|careers

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 attn: Lisa Harrington. Please reference job # below:

Business Operations Assoc, Mountain View, CA #1615.3872: Provide analytical support to Google's Strategic Partnership teams. Exp incl pricing analysis; competitor benchmark & monetization strategy; stat modeling package; utilize large datasets; product or project mgmnt in tech industry; & presentations to sr mgmnt.

Strategy & Operations Assoc; Mountain View, CA; #1615.1791: Execute high level business oper & strategy proj defined by Google's exec team. Exp incl: new product dvlpmnt; sales incentives & techniq, bus rqrmnts, & hr modeling; resource allocat; bus & opportunity model; scenario plan &risk profiling, & perf mgmnt.

Partner Technology Mgr, Mountain View, CA #1615.1694 Provide tech support for Google's sales team & strategic partners to ensure the development & launch of new company products. Exp incl: ntwrkng tech incl HTTP, SSL, and TCP/IP; prog incl XML, Jscript & Unix/Linux; mobile payments, online payments; & manag tech projects.

Financial Analyst, Mountain View, CA; #1615.2345. Perf Financial Analyst responsibilities to support business decisions of co's new projects, analysis & finan planning. Exp incl. Hyperion & Oracle systems; Acct research f/ FASB & U.S. GAAP; inventory mgmnt; valuation models, financial acct, corp finance & financial statement analysis.

SW Eng Positions (Mountain View, CA):

Design, develop, modify, and/or test sw needed for various internet search engine co. projects. Exp include:

#1615.3443, design & dvlpmnt of large system sw; C, C++, STL; advan algorithms & data struct; oo analysis & design, & Linux systems; Python, multi-thread, distr syst; & databases
#1615.1367 sw eng; bldg mobile, social, & gaming-related sw & large scale platforms, wrt product code, work with developers; develop server tech; & Java.
#1615.990; Java, C or C++; Java appl & design patterns; Linux; algorithms; & distrib syst.
#1615.558, analysis of large data sets & dvlpmnt of large distrib syst; troubleshoot large prod syst; C++; & perf optimization of large prod syst.
#1615.1295. algorithms, advanced data struct; design patterns; C or C++; Java; oo analysis & design; test drive dvlpmnt; online ad syst; & scalable distrib syst.
#1615.1520. C; C++, Jscript, HTML, PERL, Hadoop, & ads targeting & optimization.

◆

Interested candidates send resume to: Google Inc., PO Box 26184 San Francisco, CA 94126 attn: Lisa Harrington Please reference job # below:
Technical Solutions Engineer; #1615.1576. Integrate Google products w/ customer technologies Exp incl: C++, Java or Python, multi-thread server-side web appl program, UNIX, GNU, or Linux systems admin, oo design, incl core libraries, design patterns, & servlets, web svcs, large-scale billing & payment systems, & large-scale distrib systems.

SW Eng Positions (Mountain View, CA):

Design, develop, modify, and/or test sw needed for various internet search engine co projects. Exp include

#1615.1617; C++; Java multithread, Python, large scale data index, mach learn; database mgmnt systems; parallel & distributed comput; & image processing algorithms.
#1615.1158, C++; multithread; STL, Python, SQL; database syst; design & dvlpmnt of large scale distributed syst. & design & dvlpmnt of online ad systems.
#1615.1458, large scale sw dvlpmnt in C, C++, & Python; design of high scalable distributed storage syst; consensus algorithms, network tools & protocols, strong & loosely consistent storage syst; algorithms; complexity analysis; optimization; & oper syst.

#1615.3615; C++, multi-thread, Unix; high availability; fault-tolerance, data struct, algorithms, & sw design; dvlpmnt of large-scale dist sys incl design, implement, & unit testing; ntwkng program & protocols, and oo program.
#1615.995, C++ program & industry standard sw maint strategies; video process, computer vision, & DSP prod design; prod test & release process; optimization of video process algorithms; identify acceptable image quality in line w/ post-product image workflows, & implement video process algorithms in industry standard plug-in interface.
#1615.3241; C or C++; SQL, Java, Python; front-end web techno, incl: HTML, CSS, Jscript, Clearsilver, & GWT; large scale distributed sys, large scale data mine & analysis; & complex algorithms & data struct.

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Assoc Principal, Ads Policy Enforcement, Mountain View, CA #1615.2460; Assist in technical sales & support of Google's targeted advertising solutions. Exp incl. internet sw & svcs; stat analysis, datamining to build binary classifiers, DBMS sw;& SQL scripts for data retrieval.
SW Eng Positions (Mountain View, CA):
Design, develop, modify, and/or test sw needed for various internet search engine co. projects. Exp include:
#1615.2632 info retrieval for large scale distr syst; natural lang process, & mach learning.
#1615.643 dvlpmnt in C, C++, or Java, mgmnt of large-scale data; distr syst; & NoSQL storage syst.
#1615.1645 C++ &/or Java; oo design; large systems sw design & dvlpmnt; data struct, algorithms, & sw design, Python or Javascript;& AJAX, database design & SQL.
#1615.587, Java based web appl dvlpmnt, incl AJAX, XML & HTML; multi-tiered web appl dvlpmnt; test driven dvlpmnt using dependency injection & appl dvlpmnt using distr syst.
#1615.1017, debug codes in large code bases, oo design & program, incl Java & C++, develop platforms for syst integration, develop user facing interfaces, distr computing, & large data, info retrieval & mach learning.
#1615.2826; Java; Python; Jscript; MySQL; & dvlpmnt & design of large sw syst.

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Software Engineer Position (San Bruno, CA) Design, develop, modify, and/or test sw needed for various internet search engine co projects. Exp incl:

#1615.505- C++ or Java, data struct, algorithms, large systems sw design & dvlpmnt; Linux, Python, database design; & SQL.

#1615.3658 - Unix or Linux syst; ActionScript 2 & 3; Jscript, Python, C or C++, dvlpmnt of appl for embedded pltfrms w/ memory & processor resource constraints, dvlpmnt of appl for OEM frameworks;& dvlpmnt of appl for OEM pltfrms

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SHARKTANK

TRUE TALES OF IT LIFE AS TOLD TO SHARKY

Not As Helpful As He Thought

Pilot fish at this construction company notices in the logs that there's a problem at one of the remote offices: A RAID array on the server has marked a drive as offline. "I quickly shipped a replacement drive to the administrative assistant on-site, since the office was so far away," says fish. "His task: Take out the bad drive (which we made blink) and replace it with the spare. All went well and the array began to rebuild. Then I lost connection to the server. After a few attempts at troubleshooting, I contacted the administrative assistant and asked him what happened. Seems that when he removed the faulty drive and replaced it with the spare, he noticed that the drive was dusty. So he proceeded to remove every drive from the server and clean them off with a can of compressed air. I'm just glad our backups were working for the restore we had to do!"

Some Like It Hot

Plant needs a new server with RAID and redundant power supplies, and this pilot fish has already gotten a satisfactory price quote and ordered. Then there's a problem. "After the internal paperwork was completed and the purchase order was issued, the vendor came back with bad news," reports fish. "Regardless of what the manufacturer had said, this model of server didn't support dual power supplies." Fish and a co-worker start kicking around options: Go back to the drawing board? Live without redundancy? The server is a mission-critical machine for the plant, so downtime is not an option. What about having a spare power supply on-site as a replacement in case of failure? co-worker suggests. Fish: "Are these power supplies hot-swappable?" Co-worker: "At best they'd be lukewarm-swappable, since there's only one of them."

We'll Never Need THAT Again

Flash back to 1997, when this programmer pilot fish gets called into a meeting with his supervisor – and it's not good news. "The company was consolidating the number of programming languages to use in the IT shop, and the language that I used almost exclusively was not going to be retained," fish says. "I got a very nice financial reason to take early retirement, and left the company in December. Fast-forward to late January: I got a frantic call from an IT supervisor at my old company. This supervisor has been tasked with tracking software code physical locations in preparation for Y2K. They purchased a software package to do part of this work, but there is one report that must contain several more data items. The report, part of the purchased package, is written in the language I used to use. Right there over the phone I was offered a rate more than two and a half times my highest hourly wage, just to come and fix the report."

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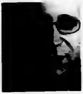

OPINION

PAUL GLEN

Check Your Work, or Else

We geeks must transform our eagerness to please into eagerness to help. There's a big difference.

I OFTEN WISH I had a time machine so I could go back and prevent technical people from taking their first step toward client relationship hell — where all interactions are tainted by the sense of mutual discomfort and mistrust that often emerges when geeks mix with business people.

It frequently starts with one small, wholly unnecessary misstep.

One of the most common complaints I hear from business people about us geeks is that we deliver things that don't work. You might be thinking that I mean "don't work" as in "don't meet some unarticulated requirement that users become conscious of after using what they asked for." Unfortunately, I'm talking about basic stuff like reports without data, buttons that don't do anything or unintelligible error messages.

For us geeks, these are trivial events, since they are usually easy to fix. It's just a small oversight: a misplaced comma or a typo in a variable name. We don't even feel embarrassed, since small adjustments are part of implementing technology.

But you probably have no idea how badly relationships can be damaged when these things happen, because end users have an entirely different experience of that same small glitch.

Imagine it from their point of view: You just told them that their long-awaited technology is ready for them to try. Excited and relieved, they begin to fantasize about all the productivity they're about to unleash. Then — *Bam!* — instant failure.

What seems like a minor setback to you is a major, emotionally charged disappointment for them. Think about the sequence of thoughts and feelings they experience:

1. Self-doubt. "Oh crap. I broke it. Maybe I'm too stupid to use this."

2. Anger. "They told me this was done! What kind of bozo would deliver this?"

3. Resentment. "They're just wasting my time because they're too lazy to test this and they expect me to do their job."

From then on, every encounter with us is tinged with the memory of that bad experience. And every human mistake we make is further evidence of our incompetence. It truly is the road to hell.

Having been on both sides of this situation, I can tell you that this usually happens because of our good intentions. Most IT people are earnestly eager to please their business partners. We respond to their constant sense of urgency with a zeal to deliver quickly, which often leads to inadequate testing and sloppy, silly mistakes.

We can easily avoid such situations by taking these steps:

1. Set expectations. If they want to see it before it's ready, tell them that they're likely to find bugs and tell them what to do when those bugs appear.

2. QA your work. Have someone else check for you. A quick look with fresh eyes goes a long way.

3. Be available. Don't just toss something over the wall. Wait by the user's desk or connect via video chat while he does his first inspection. If something goes wrong, he won't feel so alone.

In the end, we must transform our eagerness to *please* into eagerness to *help*. These might sound the same, but they're quite different. Trying to please often leads to unrealistic promises, half-thought-out solutions and poor quality. Helping often means delivering difficult truths, managing expectations, sharing challenges and limiting the scope of what we take on. In the short run, being helpful often means displeasing our business partners, but that's what they want and need from us. ◆

Paul Glen, CEO of Leading Geeks, is devoted to clarifying the murky world of human emotion for people who gravitate toward concrete thinking. His newest book is *8 Steps to Restoring Client Trust: A Professional's Guide to Managing Client Conflict*. You can contact him at info@leadinggeeks.com.

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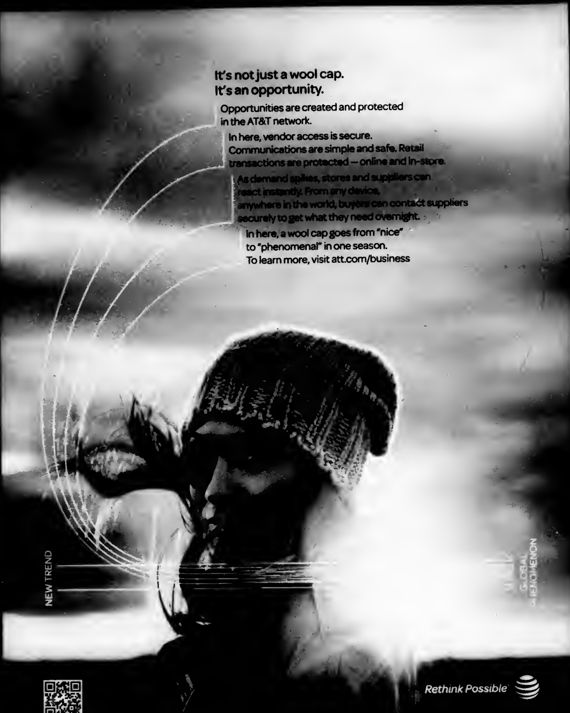

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